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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/734,540

12/12/2003

Paul Yang

14101 B

9708

36672

7590

12/29/2005

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EXAMINER

KRAUSE, JUSTIN MITCHELL

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/734,540	YANG ET AL.	
	Examiner	Art Unit	
	Justin Krause	3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "hard" and "soft" are relative terms and have no basis for comparison within the claims. Further clarification is needed to define the relationship and the property that is being referred to as hard or soft.

Claim 3 recites the limitation "can be made of thermoplastic elastic material" which is indefinite because it leaves the material group open to other possible materials.

Examiner respectfully requests further definition of the term "tensile stress" in claim 5. It is unclear if the intended meaning is the ultimate tensile stress, also known as Tensile Strength, of if the intended meaning is a measured value obtained from laboratory testing. For the purpose of examination the understood definition is being taken to mean Ultimate Tensile Stress.

Claim 6 recites the limitation "normal atmospheric temperature" which requires further definition. The "atmosphere" is unclear as the conditions depend on the intended environment and the intended temperature range is unknown.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 7 and 8, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Lundgren (US Patent 4,173,907) in view of Benton et al (US Patent 4,859,394).

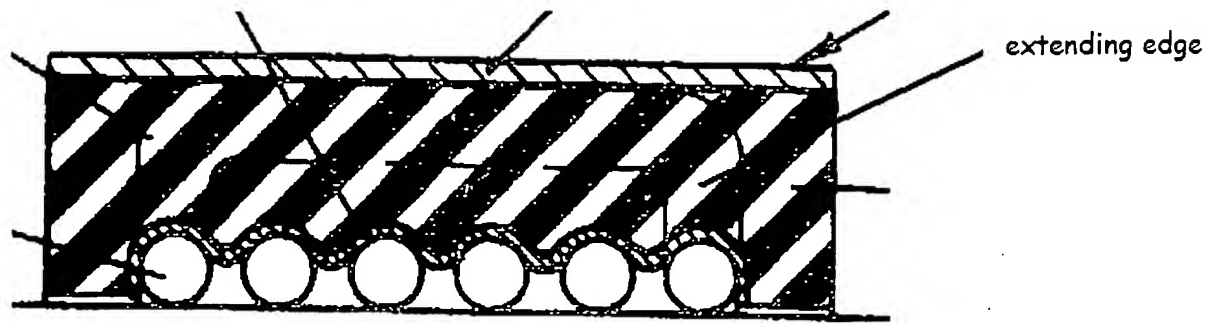
Lundgren discloses a reflow device for a ball screw provided with a recirculating path (6), capable of being fixed to a screw nut assembly and integrally combined with a screw nut, the reflow device including a hard portion (7) and a soft portion (5), the hard portion combined with the soft portion.

Lundgren does not disclose the reflow device wherein the rolling balls are surrounded by the soft portion.

Benton teaches of a reflow device wherein the rolling balls are surrounded by a soft portion (64) to create a low friction endless track for the balls to recirculate (Col 2, line 47-66).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Lundgren and surround the reflow path with soft material to create a low friction endless track as taught by Benton.

Regarding claim 2, Lundgren discloses a soft portion provided with an extending edge connecting to the recirculating path.



Regarding claim 3, Lundgren discloses that the soft portion may be thermoplastic. (Col 2, line 3)

Regarding claims 4-6, there exists thermoplastics that exist having a hardness of 35D-63D, tensile stress of 10.33 MPa-41MPa, and Flexural modulus of 30-330 MPa. According to MATWEB online material database, Thermoplastic Polyurethane has properties that meet these ranges. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a material such as thermoplastic polyurethane based on its suitability for the intended use of the device.

Regarding claims 7 and 8, Lundgren discloses the hard portion should be made of a material which is resistant against external influence (Col 2, lines 14-16) and is capable of being made of metal (Steel, Col 2, line 15) or polyacetal material which are capable of resisting external influence. Further, a selection of material suited to the

intended use of the device would have been obvious to one of ordinary skill at the time the invention was made.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

3,327,551 discloses a composite reflow device

3,313,873 discloses a reflow device with thermoplastics being suitable material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Krause whose telephone number is 571-272-3012. The examiner can normally be reached on Monday - Friday, 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMK

12/22/05



RICHARD W. RIDLEY
~~PRIMARY EXAMINER~~

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